

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ROME DIVISION

FILED IN CLERK'S OFFICE

FEB 09 2004

LUTHER D. THOMAS, Clerk

Deputy Clerk

IN RE: TRI-STATE
CREMATORY LITIGATION

MDL DOCKET NO. 1467

SUPPLEMENTAL DISCLOSURE FOR DR. WILLIAM BASS

1. I expect to testify about my examination of and findings regarding seventeen sets of materials cremated at Tri-State Crematory. A chart summarizing my findings is attached hereto as Exhibit A, and a copy of my report regarding each set of remains is attached hereto as Exhibit B.

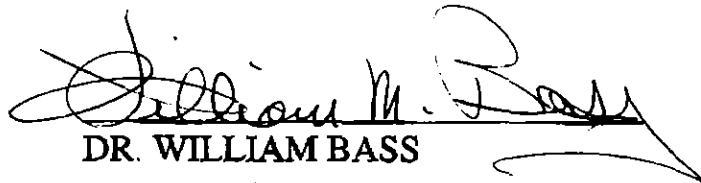
2. I expect to testify regarding differences in the cremated remains from Tri-State as compared to the hundreds of sets of cremated remains that I have examined over the years from other cremation facilities. Specifically, my examinations reveal that the remains from Tri-State contain non-human materials, such as metal, glass and cloth. Such non-human materials were not present in any other cremated remains I have examined. The remains from Tri-State also are darker in color than the remains I have examined from other facilities. Based upon my experience, knowledge and training, the darker color indicates that these remains were burned either for a shorter period of time, or at a lower temperature, or both than remains cremated at

other facilities. In addition, the remains I have examined from other cremation facilities all contained a metal identification tag. No such tag or other identification measure was present in any of the remains from Tri-State. Finally, the remains from Tri-State contained larger pieces of bone than were found in the remains from other facilities that I have examined.

3. When I visited the Tri-State grounds in the summer of 2002, I observed a number of cremated and uncremated human remains. For example, I observed fragments of human bones in the building housing the cremation chamber. The identity and number of decedents whose remains I personally witnessed on the grounds cannot be scientifically determined.

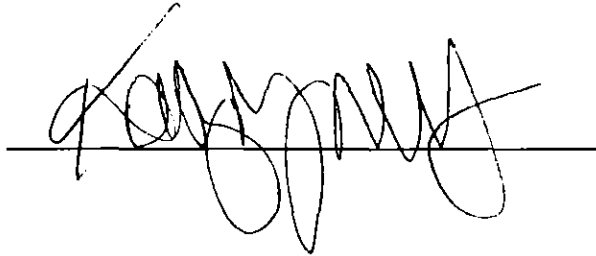
4. Cremation destroys DNA. While many things can be discerned from cremated remains, without a metal identification tag, making a positive identification of a decedent is not reasonably possible.

DATED: 2-5-04


DR. WILLIAM BASS

PROOF OF SERVICE BY MAIL

I hereby certify that a copy of the foregoing was served by postage prepaid United States mail on the 12 of February, 2004 addressed to those listed below:

A handwritten signature in black ink, appearing to read "J. Anderson Davis", is written over a horizontal line.

J. Anderson Davis, Esq.
Brinson, Askew, Berry, Seigler,
Richardson & Davis, LLP
PO Box 5513
Rome, GA 30162

*Funeral Home Defendants
Lead/Liaison Counsel*

Frank E. Jenkins, III
Jenkins & Olson, PC
15 South Public Square
Cartersville, GA 30120

McCracken K. Poston, Jr., Esq.
Attorney at Law
62 Nance Lane
PO Box 1130
Ringgold, GA 30736

*Counsel for Defendants
T. Ray Brent Marsh &
Tri-State Crematory*

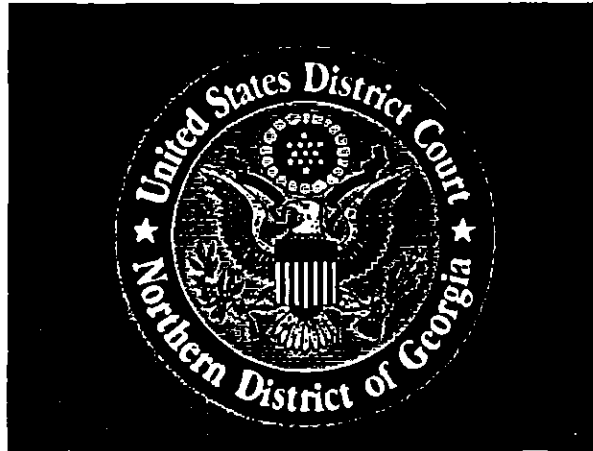


EXHIBIT / ATTACHMENT

A

(To be scanned in place of tab)

No.	Year	Name	Sex	Client	Staples	Animal Bone	Other Metal	Other Materials
02-3	2000	Floyd	F	Brown			Lead ball	2 dark pieces of cloth; lot of "fuzz balls" (added after cremation); plywood
02-4	2000	Harden*	M	Brown	1=12 mm long		"Gripper"; Screen wire; Metal Bristels	
02-5	1993	C. Shull	M	Smith				
02-6	2001	R. Shull	F	Smith				
02-7	2000	McNelly	M	Smith				
02-9	1987	Thuesen	M	Smith			St. Christopher Metal	Pieces of "Fire Brick"; 2 nails 24 & 64 mm; 5 short nails
02-10	1997	Gibbs	M	Smith			Riveted metal button	Burned black cloth; melted glass "clinkers"
02-11	1995	Saunders	F	Smith			Flat "Snow Flake" pendant	8 Bristles Course Brush; "Grippers"; many small blue pebbles; 3 copper cylindrical beads
02-12	2001	Holder	M	Smith	4 (5 mm) "Closed"	Cow skull		4 pieces of "Fire Brick"
02-13	1994	Smith	F	Family				"Gripper"; 5 mm long wire; "Fire Brick"; flat pieces of copper (4x19mm) in front of a "j"
02-14	1992	Mason	M	Smith			15 x 17 mm Wire ring	5 rocks (7-8 mm) probably "Fire Brick"
02-15	2000	-----	---	Family	6 Closed	Non-Human Rib		1 metal clasp (3 x 7 mm); holding 15 mm long piece of wire
02-16	1995	Thompson	F	Family			"Gripper"?; wire 4 mm & 6 mm	Manufactured metal shaft (3 ½ mm) 1 round end
02-18	1996	Harmon	M	Jenne	7 Staples		6 pieces of "Gripper"	25 pieces of finely woven Black cloth 2 items of unburned leather
02-19	2000	Cann	M	Smith	8 Closed	Non-Human Ribs		
02-20	2001	Watts**	F	Brown		Non-Human bone		
02-22	1994	Kopp	F	Cigelske	6 Closed			1 metal circular band with hole 3 ½ mm wide & 4 ½ mm long; thin sheet metal rolled into circular band; 5 pieces of "Fire Brick"

*These were not the remains of Lloyd Harden whose body was later identified by the G.B.I.

**This family returned the first set of cremains to the G.B.I. when they picked up their loved one. They retained one bone fragment from the first cremation and asked for an identification.



EXHIBIT / ATTACHMENT

B

(To be scanned in place of tab)

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



To: Attorney William J. Brown
Family of GAIL FLOYD

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States Crematorium thought to be
the cremated remains of GAIL FLOYD
Forensic Anthropology Case number: 02-3

Date: May 25, 2002

College of
Arts & Sciences

Department of
Anthropology

Forensic
Anthropology
Center

An
Endowed
Center

On February 21, 2002 I received an e-mail from Attorney William J. Brown requesting aid in the identification of material returned from the Tri-States Crematorium and thought to be the cremated remains of GAIL FLOYD, a white female who was 44 years old at time of death, which was on March 21, 2000.

Arrangements were made for Mr. Brown to bring the material to my office on March 14, 2002. Presented for analysis is a black plastic box measuring 8 ½ x 6 ¼ x 4 ½ inches. Inside of the plastic box is a clear plastic bag containing dark gray "ash" with burned human bone fragments that weighted three and one half pounds (1600 grams).

This material was sifted through a 4 millimeter (mm) screen (USA Standard Test Sieve No. 5) revealing burned human bone fragments while Attorney William Brown was present. The human bone that did not pass through the 4 mm screen was removed and later the remaining material (that had originally passed through the 4 mm screen) was screened an additional five (5) times. The material that did not pass through the 4 mm screen during the six (6) separate screenings that can be identified are as follows:

IDENTIFIABLE HUMAN BONE

a piece of the Occipital (cranial) bone measuring 45 x 30 millimeters
a chin section of the mandible
the roots of six (6) incisor and/or canine teeth
the head (articular surface) of a humerus or femur (the fovea capitis is not present)
rib and long bone fragments

The total weight of the identifiable bone fragments is slightly less than one half pound.

NON-HUMAN MATERIAL DISCOVERED

One (1) lead ball 5 millimeters in diameter.

At least ten (10) plus white "Fuzz Balls" were recovered. A sample of similar white "Fuzz Balls" from another cremation (Forensic Anthropology Case No. 02-4) done the same year (2000) at the Tri-States Crematory was submitted for analysis to Dr. Randall R. Bresee, Professor of Textile Science at the University of Tennessee. A portion of his analysis is attached to this report indicating that these white fuzz balls were composed of synthetic fibers, probably polypropylene that melt at a low heat. This suggest that these fuzz balls were not subjected to temperatures above 161 degrees Centigrade and thus were intruded into this cremation after it had cooled.

Two (2) dark brown pieces of cloth material that look and feel like yarn. One piece is at least 12 millimeters long. The second piece is coiled.

The remaining material (approximately three (3) pounds) tests positive for limestone (cement) when Hydrochloric Acid is added. A forty two (42) gram sample was chosen at random from this remaining material, after it was screened six (6) times and submitted to Dr. Al Hazari, a Professor in the Chemistry Department at the University of Tennessee for additional analysis. His report has not been received at the time of this writing and will be added as an addendum when it is received.

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



To: Attorney William J. Brown
Family of LLOYD HARDEN

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States Crematorium thought to be
the cremated remains of LLOYD HARDEN
Forensic Anthropology Case Number: 02-4

Date: May 26, 2002

College of
Arts & Sciences

Department of
Anthropology

Forensic
Anthropology
Center

An
Endowed
Center

On February 21, 2002 I received an e-mail from Attorney William J. Brown requesting aid in the identification of material returned from the Tri-States Crematorium and thought to be the cremated remains of LLOYD HARDEN, a white male who was 44 years old when he died on April 18, 2000.

Arrangements were made for Mr. Brown to bring the material to my office on March 14, 2002. Presented for analysis was a paper bag inside of which was a doubled plastic bag that contained dark gray "ash" with burned human bone fragments that weighted three pounds 10 ounces (1650 grams).

This material was sifted through a 4 millimeter (mm) screen (USA Standard Test Sieve No. 5) revealing burned human bone fragments as well as other items while Attorney William Brown was present. The human bone that did not pass through the 4 mm screen was removed and later the remaining material (that had originally passed through the 4 mm screen) was screened an additional five (5) times. The material that did not pass through the 4 mm screen during the six (6) separate screenings that could be identified are as follows:

IDENTIFIABLE HUMAN BONE

Burned fragments of a femoral (or humeral) head (articular surface)
The distal portion of a middle phalanx of the hand
A distal portion of a phalanx of a toe
Fragments of a metatarsal, ribs, femur and tibia

NON-HUMAN MATERIAL RECOVERED

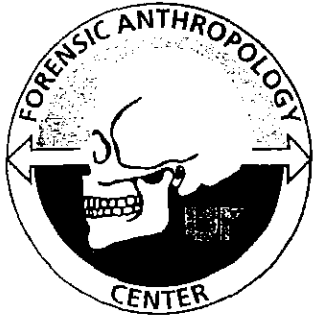
One (1) 12 millimeter long metal staple

Some black fabric fragments and a large number of "Fuzz Balls". This material was submitted for analysis to Dr. Randall R. Bresee, Professor of Textile Science at the University of Tennessee. A copy of his report is attached. Note that the white "Fuzz Balls" were composed of synthetic fibers, probably polypropylene that melt at a low temperature. This suggest that these fuzz balls were not subject to temperatures above 161 degrees Centigrade and thus were intruded into this cremation after it was cooled

Burned wood fragments. A sample of these were submitted for analysis to. Dr. Brian H. Bond, Assistant Professor, Forest Products Center, the University of Tennessee. Dr. Bond has identified some of the wood as a burned piece of plywood. Because he needed to take additional photographs his report was not ready at the time of this writing. His report will follow.

The remaining material that passed through a 4 millimeter screen (2 pounds 14 ½ ounce or 1320 grams) tested positive for limestone (cement) when Hydrochloric Acid was added. A forty two (42) gram sample was chosen at random from this remaining material, after it was screened six (6) times and submitted to Dr. Al Hazari, a Professor in the Chemistry Department at the University of Tennessee for additional analysis. His report has not been received at the time of this writing and will be added as an addendum when it is received.

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



To: Attorney Alan Murphy
Attorney David Randolph Smith
Don Shull

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematorium thought to be
the cremated remains of CLIFFORD SHULL.
Forensic Anthropology case number: 02-5

Date: 4-27-02

College of
Arts & Sciences

Department of
Anthropology

Forensic
Anthropology
Center

An
Endowed
Center

On April 10, 2002 Mr. Don Shull brought to my office the supposed remains of his father CLIFFORD SHULL who died June 13, 1993 and whose body was sent to the Tri-States crematorium. The black plastic box (6 ½ x 4 ¼ x 8 ¼ inches) presented for analysis had been exhumed and wet red clay (mud) was on the outer surface. When opened a clear plastic bag contained wet material that weighted 5 pounds 13 ounces (2650 grams). The material was placed on a flat surface covered by aluminum foil to dry in the sun.

After the material was dry a dry weight was taken (see below) and the material was screened through a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5). The material is light gray in color and most of the material passed through the 4 mm screen.

Material	Pounds	Ounces	Grams
Unopened, wet weight	5	13	2650
Dry weight	4	10	2100
Material that did not pass thru 4 mm	1	0	450

The size of the material in this case is much smaller than in other (and later) cases that I have looked at from the Tri-States Crematorium. The material that passes through the 4 mm screen is about 1-2 millimeters in size with very little ash. In the 1 pound of material that did not pass through the 4 mm screen no fragments were large enough to identify individual bones.

The screening revealed seven (7) pieces of metal that did not pass through the 4 mm screen:

1 nine (9) mm fragment of a round metal "gripper" as on a hospital gown

2 pieces of metal "screen wire" looking material. One piece is rounded but appears to have been flat previously. This piece is 9 mm in length. The second piece is flat and is also 9 mm long. A check with both the Heart Surgeons and the Cardiologist at the University of Tennessee Medical Center did not suggest that these were for medical implants.

2 thin flat pieces of rigid metal that resemble teeth or bristles from a wire brush. The thinner and shorter one of the two is 24 mm long and the larger one is 26 mm long

2 pieces of unidentifiable metal, one flat and 12 mm long and the second round and 13 mm long.

None of the bone fragments were large enough to identify a specific bone. When Hydrochloric Acid was dropped on the material that passes through the 4 mm screen there was an immediate and positive reaction to limestone (cement).

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



To: Attorneys Alan Murphy
Attorney David Randolph Smith
Don Shull

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematorium thought to be
the cremated remains of RUBY MARIE SHULL
Forensic Anthropology Case Number: 02-6

Date: 4-29-2002

College of
Arts & Sciences

Department of
Anthropology

Forensic
Anthropology
Center

An
Endowed
Center

On March 26, 2002 I received a telephone call from Attorney Alan Murphy and a call the next day from Attorney David Randolph Smith, both of David Randolph Smith and Associates, requesting aid in the analysis of cremated remains returned from the Tri-States Crematorium. On April 10, 2002 Mr. Don Shull brought to my office the supposed remains of his mother, RUBY MARIE SHULL.

He stated that his mother was born on November 21, 1931 and died on June 14, 2001. She would have been 69 years old at time of death.

The material is contained in a black plastic box (6 ½ x 4 ¼ x 8 ¼ inches) within which is a clear plastic bag closed with a green tie containing the material. The material is light gray in color and contains a number of large (30-40 millimeters in length) pieces of bone. The material is coarsely ground or broken. Weights are as follows:

Material	Pounds	Ounces	Grams
Unopened plastic bag and material	3	0	1360
Weight of "ash" that passed thru a 4 millimeter screen	1	11	775
Weight of material that would not go thru a 4 millimeter screen	1	5	585

The bag was opened and all of the material was screened through a Number 5 (4 mm) U.S.A. Standard Test Sieve allowing all particles less than 4

millimeters (mm) to pass through the sieve. Note that slightly less than half of the material (1 lb. 5 oz.) was larger than 4 millimeters.

When a magnet is drawn through the material there are small red and black particles that stick to the magnet. These are too small for visual identification.

Identifiable material that would not go through the 4 mm screen is:

Phalanges of 1 finger and 2 toes

Transverse process of a vertebra

Cranial bone fragments but unidentifiable as to which cranial bone

Long bone fragments of both small long bones (radius, ulna and fibula) and large bones (femur and tibia)

No teeth or metal large enough to identify were found.

Hydrochloric Acid was added to the material that had passed through the 4 mm screen giving a positive reaction to the presence of limestone (cement).

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



To: Attorney Alan Murphy
Attorney David Randolph Smith
Charles McNeely

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of cremated remains thought to be those of
NORMAN R. McNEELY
Forensic Anthropology Case Number: 02-7

Date: 4-27-02

College of
Arts & Sciences

Department of
Anthropology

Forensic
Anthropology
Center

An
Endowed
Center

Received from Charles McNeely, RR1, Box 236, Tracy City, TN 37387-9724 is one box by Registered Mail Number 939 786 239 US. Inside was a black plastic box used to transport cremains measuring 6 ½ x 4 ¼ x 8 ½ inches. This box was wrapped in a plastic bag with the "Fred's" logo. The plastic bag was wet. The black plastic box was Duct Taped shut. The Duct Tape was cut revealing a very wet clear plastic bag of wet material. A label on the bottom of the box was marked "NORMAN R. McNEELY". A Certificate of Death sent by Charles McNeely indicated that NORMAN ROBERT McNEELY died on August 13, 2000. The contents of the bag were weighed and the material placed on a flat pan to dry in the sun and wind.

	Pounds	Ounces	Grams
Wet weight	3	10 ½	1650
Dry weight	2	13	1270
Material that passes thru 4mm screen	1	7	640
Material that does not pass thru a 4mm screen	1	6	630

Material was placed in the dry original plastic bag and the dry weight taken. All of the material was screened through a Number 5 (4mm) U.S.A. Standard Test Sieve allowing all particles less than 4 millimeters (mm) to pass through the sieve. This material is very coarsely ground with many pieces being 35-45 millimeters in length. The bones are human and the following bones could be identified:

Skull: mastoid process of the Temporal bone, Frontal crest and sinuses of the Frontal bone, pieces of the Temporal and Parietal bones, and a portion of the Zygomatic arch (cheek bone).

Vertebra: the articular surfaces of three (?) Cervical vertebra are identified.

Long bones: pieces of the Femur and fragments of the articular surface of the femur or humerus. Fragments of some of the smaller long bones.

Ribs: a piece of the proximal end of a rib.

I found two pieces of the Frontal bone with the frontal crest that joined. These were glued back together.

When Hydrochloric Acid was added to the material that passed through the 4-millimeter screen there was a positive reaction to limestone (cement).

When Hydrochloric Acid was added to the large clean bone fragments there was no chemical reaction but the large pieces that contained ash reacted positively until all of the ash had burned away.

I found no teeth or phalanges of the hands or feet and no identifiable metal pieces, however, when a magnet was drawn through the material that passed through the 4 mm screen the head of the magnet was covered with fine material.

To: Attorney Alan Murphy
 Attorney David Randolph Smith
 Donald Thuesen, Son

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematorium thought to be
 the cremated remains of WILLIAM B. THUESEN.
 Forensic Anthropology case number: 02-9

Date: 5-12-02

On April 29, 2002 I received one well wrapped package by Registered Mail RR 165 681 314 US containing cremains in a Bronze sheet metal box measuring 6 ½ x 4 x 8 ¾ inches. These were received from Forest Lawn Hollywood Hills Memorial Park, 6300 Forest Lawn Dr., Los Angeles, CA 90068 at the request of Donald Thuesen, 12425 West Morning Dove Dr., Sun City West, AZ 85375. Donald Thuesen is the son of WILLIAM THUESEN.

WILLIAM THUESEN was born 10-19-1902 and date of death was 06-14-1987. The Bronze sheet metal box was opened with difficulty (the teeth on the end cap help tightly to the edges of the sheet metal box). After opening the cremated material was in a plastic bag held together by a blue tie. Photographs were taken. The material was dry and weighed 3 pounds 5 ounces or 1500 grams

Analysis consisted of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U.S.A. Standard Test Sieve (No. 10). The material is coarsely ground and light gray in color and the weight of material that will pass through the above two screens are as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight	3	5	1500
Material not passing thru 4 mm	1	3	560
Material not passing thru 2 mm		8	230
"Ash"	1	8	680
Nails, rocks, St. Christopher metal		2	30

The material is coarse ground with many identifiable bone fragments. There is a section of the tibia that is 61 mm long and a section of the fibula at 58 mm. There are a number of bone fragments in the 30 – 45 millimeter range. A Petrous portion of a temporal bone and pieces of cranial bone containing sutures with inside closure are present. Sections of vertebra with the articular surface of the body and articular surfaces of the Inferior and Superior articular processes are present.

A Saint Christopher metal with at least a 16 inch long chain was recovered. Other metal items found consist of two (2) long nails (one is 64 mm and the second is 24 mm), at least five (5) shorter nails or tacks, a bent nail or screw (?) that is 31 mm (not straight). A number of pieces of metal too small to identify attached to the head of the magnet

Two (2) false tooth crowns from either the premolar or molar teeth are present.

A number of fairly large pieces, the size of a marble, of rocks or fire brick are present.

A 20 gram sample of “ash” was submitted to Chemistry for analysis. When Hydrochloric Acid was dropped on the “ash” that passed through the 2 millimeter screen there was an immediate and positive reaction to limestone (cement).

To: Attorney Alan Murphy
Attorney David Randolph Smith
David Gibbs, brother

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematorium thought to be the cremated remains of KENNETH GIBBS, whose date of death was 9-19-1997.
Forensic Anthropology case number: 02-10

Date: June 17, 2002

On June 12, 2002 I received one well wrapped package by Priority Mail delivery confirmation number 0310 2990 0001 6948 5870 containing cremains in a standard black plastic box (6 ½ x 4 ¼ x 8 ¼ inches). When the tape holding this box closed is cut the cremains are contained in a thin plastic bag containing holes that allowed some of the cremains to spill into the plastic box. This plastic bag is held together by a green tie. The cremains are dry, gray and black in color and contain a number of large identifiable pieces of human bone. Before screening the following pieces were removed:

57 x 45 millimeter section of skull Occipital ?
59 x 32 " " " " Parietal bone with sagittal suture
57 x 32 " " " " Parietal bone with sagittal suture
47 x 25 " " " innominate, iliac crest (anterior superior spine)
47 x 20 " " " innominate, ischium
Top portion of the sacrum with articular surface

After the above bones were removed the material was weighed and the analysis consisted of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U.S.A. Standard Test Sieve (No. 10). The material is coarsely ground and weight of material that will pass through the above two screens are as follows:

MATERIAL	Pounds	Ounces	Grams
Total dry weight	2	11	1220
Would not pass thru a 4 mm screen	2		910
Would not pass thru a 2 mm screen		4	110
Passes thru a 2 mm screen (ash)		7	200

Identifiable sections of the following bones, in addition to the large pieces given above, are as follows:

Skull: Parietal

Long bones: Humerus, Radius, Femur, Tibia, Fibula

Ribs

Vertebra

Innominate: Iliac crest

Hand: a complete middle phalanx (20mm) with blue staining (copper ?)
a complete distal phalanx (18mm)
distal articular surface of a proximal phalanx

METAL

A riveted metal button similar to those on pants above the zipper and behind the belt buckle to hold the right and left sides of the pants together at the top was recovered.

CLOTH

A number of small pieces of burned (black) cloth were recovered.

When Hydrochloric Acid was dropped on the "ash" that passed through the 2 mm screen there was an immediate and positive reaction to limestone (cement).

CLINKERS

Seven (7) pieces of melted glass or "clinkers", the largest measuring 20 x 21 millimeters and the smallest measuring 9 x 10 millimeters, were recovered.

To: Attorney Allan Murphy
 Attorney David Randolph Smith
 Kathy Cordell, daughter

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematory thought to be the cremated remains of ELVA M. KEIRSTEAD SAUNDERS, white, female, age 83, date of death November 28, 1995. Forensic Anthropology Case Number 02-11.

Date: July 22, 2002

I received on Tuesday July 16, 2002 one well insulated package by Certified Mail number 7002 0510 0003 2450 8717 containing cremains in a black plastic box measuring 6 ½ x 4 ¼ x 8 ¼ inches. This material was sent by Kathy Cordell, 3610 5th Ave, Chattanooga, TN 37407 and thought to be the cremains of her mother. Inside of the black plastic box was a 12 x 14 inch clear plastic bag with no tie. The top was folded down on the material. The material was wet and I had to allow it to dry for two days prior to analysis. The material is medium ground and light gray in color. Weight of the dried material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight	4	1	1860
Material not passing thru 4 mm	1	0	450
Material not passing thru 2 mm	-	12	370
"Ash"	2	5	1040

The analysis consisted of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U.S.A. Standard Test Sieve (No. 10). The material is medium ground with few identifiable bones. Identifiable items are as follows:

BONE

Two (2) pieces of human skull, one (1) from the base of the skull with a foramen and one (1) piece of cranial vault with a suture line.

TEETH

One (1) molar tooth crown (dark in color) 11 x 19 mm

Five (5) pieces of enamel like tooth crown. One (1) with a hole for a peg or attachment post. The largest piece is 10 x 4 mm and the smallest is 2 x 4 mm.

METAL

A flat pendant with small holes in a Snowflake design. A small piece from the right side has been broken off and is not present. The flat pendant measures 22 x 18 mm.

Three (3) copper cylindrical beads made from a flat piece of copper sheet and rolled into a cylinder. Number 1 measured 7 x 12 mm, number 2 was 7 x 12 mm and the third was 9 x 12 mm.

Grippers (similar to those in a hospital gown)

One (1) both sides, male and female. These are closed (united).

Two (2) male halves

One (1) female half

Seven (7) metal fragments. Two (2) are tiny 3 mm long manufactured pegs.

BRUSH

Eight (8) bristles from a coarse brush or broom were recovered ranging in size from the largest bristle being 40 mm (curved) to the smallest 12 mm (straight).

When a magnet is drawn through the material it collects very fine metallic "dust" and a few small pieces of metal, probably pieces from the metal Grippers that are too small to identify.

A number of small (glass bead size) blue pebbles, that crush under pressure, and of unknown origin were recovered.

When Hydrochloric Acid was dropped on the "ash" that passed through the 2 millimeter screen there was an immediate and positive reaction to silicon. Silicon is a common chemical element present in large amounts in sand,

clay, cement, concrete, etc., but in very minute quantities in a typical human body.

To: Attorney Allan Murphy
Attorney David Randolph Smith
Diana R. Reece (Holder) daughter

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematory thought to be the cremated remains of MALCOLM CHARLES HOLDER, white, male, who died on August 27, 2001
Forensic Anthropology Case Number: 02-12.

Date: July 28, 2002

I received on Monday July 22, 2002 one well wrapped package by Registered Mail number RA 833 112 664 US containing cremated material in a black plastic box measuring 6 ½ x 4 ¼ x 8 ¼ inches. This material was sent by Diana R. Reece (Holder), the daughter of MALCOLM CHARLES HOLDER, whose address is 264 Shiloh Lane, Ellijay, GA 30740. Inside of the black plastic box, the cremated material was in a clear plastic bag measuring 12 x 14 inches closed by a green tie.

This cremated material had previously been looked at by the Georgia Bureau of Investigation and the black plastic box was partially covered by a torn brown paper grocery bag that had been originally sealed with red "EVIDENCE" tape and contained the following information;

"Holder, Malcolm Charles, 032102, 10:55 AM, E237276, cremains, SA GA Ramey".

In a cover letter with the cremains dated June 26, 2002, Diana Reece states "I first took the cremations to the GBI February 22. The GBI kept the cremations stating they were non-human. They called me a few days later and said that someone had looked at them and they were human to please pick them up".

The material is dark gray and is coarse ground (sections of individual bones can be identified, such as phalanges, and measurements of most bone fragments are between 15 – 30 millimeters). There is some unburned bone in with this material, and the material is not well burned as there are a number of bone fragments that are black (indicating low heat and/or an early stage of burning). Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight containing bag	2	14	1300
Will not pass thru 4 mm	-	13	370
Will not pass thru 2 mm	-	7	210
"Ash"	1	10	720

Analysis of the material :

HUMAN BONE

There are very few identifiable fragments but there is a 37 mm section of the humerus (?), a 38 mm section of a femur (?).

Two (2) phalanges of the foot and at least four (4) articular facets of vertebra are present.

NON HUMAN BONE

A small piece of cranial bone contains a suture that I thought was too complicated for a human skull. I ask Dr. Walter Klippel, a professor of Zooarchaeology in the Anthropology Department to help me in the analysis of this piece. After comparison with skeletal remains of a cow (*Bos taurus*) this piece compares favorably with a section from the median Palatine Suture of a calf or cow. This would be from the roof of the mouth. In addition, there are other bone fragments too small for positive identification that have the anatomical structure and feel of non human bone.

TEETH

There are eight (8) pieces of tooth fragments with one being a piece of enamel.

METAL

Four (4) small "closed" staples (5 millimeters in length) forming a square shaped "O" could possibly be surgical staples. Two (2) very small pieces of unidentifiable metal are also present.

ROCK

At least four (4) pieces of rock, one piece is 13 mm and the other 14 mm in length, appear to be pieces of firebrick from the crematory oven.

“ASH”

When Hydrochloric Acid was dropped on the “ash” that passed through the 2 millimeter screen there was an immediate and positive reaction to silicone. Silicone is a common chemical element present in large amounts in sand, clay, cement, concrete, etc. , but in very minute quantities in a typical human body.

To: Peter F. Protis

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematory thought to be the cremated remains of AMELIA SMITH, white, female, age 96, date of death January 29, 1994.
Forensic Anthropology Case Number: 02-13.

Date: July 27, 2002

I received on Thursday July 27, 2002 one well wrapped package by Priority Mail, Delivery Confirmation number 0301 0120 0008 5453 4576 containing cremated material in a black plastic box measuring 6 ½ x 4 ¼ x 8 ¼ inches. This material was sent by Peter F. Protis, 4226 Arbor Club Dr., Marietta, GA 30066 and are thought to be the remains of his aunt. Inside of the black plastic box was a 12 x 14 inch clear plastic bag with no tie. The top was folded down on the material. Dry red dirt was on the outside of the black plastic box indicating that the cremains box had been buried and exhumed. The material was medium ground (indicating that most, if not all, of the bone fragment are not identifiable as to specific bones. Fragments fall in the 4 – 15 millimeter range.) and light gray in color. Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight	4	1.5	1860
Material not passing thru 4 mm	-	4.5	125
Material not passing thru 2 mm	-	10	285
"Ash"	3	3.5	1450

The analysis consisted of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U.S.A. Standard Test Sieve (No. 10). Identifiable items are as follows:

BONE

Fragments of both cranial and long bones (femur, tibia and/or humerus) are present but the fragmentation is too great for positive identification of specific bones. The color of the bone fragments range from black to light

gray suggesting that the crematory was not heated to its highest level. Bones burned black still contain some organic material. Most of these fragments fall in the 4 – 15 millimeter range with one long bone fragment measuring 18 millimeters long. No evidence of teeth were recovered.

METAL

A flat piece of copper 4 mm in width and 19 mm long has been bent into a “J” pattern. In the form of a “J” it is 13 mm high

One (1) approximately round metal “Gripper” is present. This is similar to the attachments for clothing such as a hospital gown. This measures 11 millimeters in diameter.

One (1) 5 mm long metal wire.

When a magnet is passed through this material it collects a number of very small metal items too minute to identify.

BRUSH

Four (4) bristles from a course brush or broom were recovered ranging in size from the shortest bristle being 7 mm to the longest being 18 mm.

ROCK

A 3 mm size rock or pebble that is possibly from the fire brick of the crematory oven is present.

When Hydrochloric Acid was dropped on the “ash” that passed through the 2 millimeter screen there was an immediate and positive reaction to silicon. Silicon is a common chemical element present in large amounts in sand, clay, cement, concrete, etc., but in very minute quantities in a typical human body.

To: Attorney Allan Murphy
 Attorney David Randolph Smith
 Ruby Thomas, sister of William Richard Mason

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematory thought to be the cremated remains of WILLIAM RICHARD MASON, white, male who died on October 6, 1992
 Forensic Anthropology Case Number: 02-14

Date: September 6, 2002

After returning from a lecture tour of New England I received by Standard Mail, Return Receipt for merchandise number 8000 1030 0003 9132,9463 one well wrapped box. Inside of the box was a standard black plastic box, 6 ½ x 4 ¼ x 8 ¼ inches containing cremated remains in a clear plastic bag measuring 14 x 20 inches and closed by two (2) ties, one (1) green and one (1) red. The green tie was put on first and the red tie was on top of the green tie.

The material is white to light gray in color with some black pieces. Most of the fragments are too small for positive identification as to specific bones. The largest fragment is 50 millimeters (mm) long and is from the proximal end of the femur just below the greater trochanter. Most pieces that do not pass through a 4 mm screen are in the 6 – 15 millimeter size and do not contain criteria for positive identification. In the pulverization scale for cremations, this falls in the medium portion of the scale where Medium is defined as "Bone fragments but none identifiable to specific bones. Measurements of bone fragments are between 4 – 15 millimeters". Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight with plastic bag	4	15	2240
Will not pass thru a 4 mm screen	-	7	200
Will not pass thru a 2 mm screen	-	15	430
"Ash"	3	9	1610

The analysis consists of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U. S. A. Standard Test Sieve (No. 10). The weights of each of these categories are given above.

BONE

Only one (1) 50 mm fragment of bone could be identified which is a fragment of the femur as reported above. Most of the fragments appear to be from long bones of the arms or legs. No cranial bone fragments could be identified, however, there are a number of fragments with cancellus tissue.

TEETH

Four (4) small pieces of porcelain, the largest of which is seven (7) millimeters long were recovered. One (1) piece, five (5) millimeters long contains cement on the interior section.

METAL

A 15 x 17 millimeter "ring" made from small wire with the ends twisted together is present. This "ring" has been bent and is not flat. When a magnet is passed through the material a number of thin metal "sheets" are attracted to the magnet. These are too small to identify. In addition, there are a number of very small round pieces of metal too small to identify.

BRUSH

One (1) eleven (11) millimeter long bristle from a coarse brush or broom is present.

ROCK

At least five (5) rocks, all being in the 7 to 9 millimeter range, are present. Two (2) appear to be heat treated and may be pieces of fire brick from the crematory oven.

When Hydrochloric Acid was dropped on the "ash" that passed through the 2 millimeter screen there was an immediate and positive reaction to silicon.

Silicon is a common chemical element present in large amounts in sand, clay, cement, concrete, etc., but in very minute quantities in a typical human body.

To: Bob Thompson, son of GLADYS TUCKER THOMPSON

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-States crematory thought to be the cremated remains of GLADYS TUCKER THOMPSON, a white, female, whose date of death was September 27, 1995 (Age 90). Forensic Anthropology case number: 02-16.

Date: September 6, 2002

On August 19, 2002 I received by UPS Ground tracking number 1Z 3X0 100 03 1041 2215 one well wrapped package from Bob Thompson, 749 Hunter Ridge, Jasper, GA 30143 containing a standard black plastic cremains box, 6 ½ x 4 ¼ x 8 ¼ inches. Inside of the black plastic box the cremated material was enclosed in a clear plastic bag tied with a clear plastic tie with two (2) metal wires inside of the clear plastic tie.

The material is gray in color with a number of black pieces. Most of the pieces are too small for positive identification as to specific bones. The largest fragment is a 25 millimeter (mm) of the parietal bones, with a section of the sagittal suture. Most pieces that do not pass through a 4 millimeter screen are in the 15 to 30 millimeter range but do not contain criteria for positive bone identification. In the pulverization scale that I have established for material returned from the Tri-States Crematory, it falls in the Coarse category where Coarse is defined as "Sections of individual bones can be identified (such as phalanges). Measurements of bone fragments are between 15 – 30 millimeters". Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight with plastic bag	4	13	2200
Will not pass thru a 4 mm screen	-	7	200
Will not pass thru a 2 mm screen	-	13	360
"Ash"	3	9	1640

The analysis consisted of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U.S.A. Standard Test Sieve (No. 10). The weight of each of these categories are given above.

BONE

A 19 x 25 mm section of both Parietal bones with a section of the sagittal suture. The sagittal suture is closed endocranially but visible ectocranially. This suggests an individual of older age.

The distal articular surface of a metatarsal (foot) bone. Possibly metacarpal (hand) bone ?.

A 20 mm section of Parietal bone containing a section of the sagittal groove on the endocranial surface.

An 18 mm and a 22 mm fragment of a long bone (arm or leg).

TEETH

A 18 mm three (3) tooth metal bridge that had been the base for a porcelain crown. Actually this is two (2) single units held together by a cantilever. It has an attachment for a removal partial denture.

A 13 mm two (2) tooth metal crown. This is for the maxillary (upper) teeth and was the base for a porcelain crown.

The metal cap of a premolar tooth. This was also the base for a porcelain crown.

Two (2) small enamel fragments, One is 5 mm long and the other is 6 mm long.

METAL

A round 10 mm metal ring or gripper similar to those on a hospital gown.

When a magnet is passed through the ash it attracted small pieces of metal wire (?). They are round and one is 4 mm and the other 6 mm long.

A third piece is 3 ½ mm long. When looked at under a microscope, it appears to be a manufactured item probably from a medical device. It is expanded on both ends of the shaft with one end being round and the other end being flat. A crude drawing of it looks like this:

ROCK

An 11 x 19 millimeter rock is present.

When Hydrochloric Acid was dropped on the "ash" that passed through the 2 millimeter screen there was an immediate and positive reaction to silicon.

Silicon is a common chemical element present in large amounts in sand, clay, cement, concrete, etc., but in very minute quantities in a typical human body.

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



College of
Arts & Sciences

Department of
Anthropology

Forensic
Anthropology
Center

An
Endowed
Center

To: Attorney Roger E. Jenne
Family of Joseph William Harmon

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-State crematory thought to be the cremated remains of JOSEPH WILLIAM HARMON, a white, male, whose date of death was January 26, 1996, (age 71)

Forensic Anthropology case number: 02-18

Date: September 30, 2002

On September 12, 2002 I received by FedEx (Tracking Number 8339 9308 0209) one well wrapped package from the law office of Jenne, Scott and Jenne. This package was opened on September 14, 2002 and contained a standard black plastic cremation box, 6 ½ x 4 ¼ x 8 ¼ inches, containing cremated remains inside of an unaddressed 12 x 16 inch First Class Mail envelope. This envelope was wet and dark red water was seeping from the cremation box. The black plastic box was stained with red dirt suggesting that this cremated material had been exhumed.

Inside of the black plastic box the cremated material was contained in a 12 x 14 inch clear plastic bag with no tie. The wet cremated material was spread out to dry. The dry material is dark gray with a pink tinge. I think that the pink color is from the stain of the dark red water that the cremated material was soaked in when it arrived.

Most of the fragments are too small for positive identification as to specific bones. There are many fragments that fall into the 25 – 35 millimeter range that enable identification as to section of the skeleton from which they came, such as skull, long bones or bones of the feet. In the pulverization scale that I have set up for the analysis of material returned from the Tri-State crematory this material falls in the Coarse to Very Coarse range where Coarse is defined as "Sections of individual bones can be identified (such as phalanges). Measurements of bone fragments are between 15 – 30 millimeters." and Very Coarse : "Identifiable bone and teeth. Bone fragments are 30 millimeters (mm) and above."

This material is thought to be the cremated remains of JOSEPH WILLIAM HARMON, a white male who was 71 years old at time of death on January 26, 1996. His date of birth was July 17, 1924. Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight with plastic bag	3	10 ½	1660
Will not pass thru a 4 mm screen	1	1 ½	480
Will not pass thru a 2 mm screen	-	13	380
"Ash"	1	12	800

The analysis consists of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 mm U.S.A. Standard Test Sieve (No. 10). The weights of each of these categories are given above.

BONE

There are at least twelve (12) cranial bone fragments ranging in size from 11 x 12 millimeters to 25 x 34 millimeters. Some of these fragments are from the parietal bones. One (1) piece that is 11 x 13 mm contains a groove for the middle meningeal arteries and a second piece measuring 19 x 20 mm is a section from the top of the skull containing a side from the sagittal suture with a sagittal groove from the internal surface.

A number of long bone fragments are represented by both pieces from the ends or articular surfaces as well as the shaft of the bones. One (1) 22 millimeter long piece is from a fibula shaft.

The distal articular surface of a metatarsal (foot) bone is present

TEETH

Three (3) metal molar tooth caps, one 10mm, one 11mm, and one 13mm in length are present. In addition, there are three (3) small pieces of enamel from the crown of a tooth (teeth?)

CLOTH

At least twenty five (25) pieces of finely woven black cloth are present. In one (1) other cremation (in 2000) returned from the Tri-State crematory I have discovered similar cloth fragments. An analysis of the cloth from the 2000 cremation found that it was cotton that had been thermally decomposed (ie, heated at temperatures above 300 C or 572 F).

METAL

Seventeen (17) pieces of metal were recovered from the cremated material. These can be grouped as follows:

Six (6) pieces of fasteners or grippers, as seen on a hospital gown. Four (4) consist of the male portion of the gripper and two(2) are the female portion. One (1) of the female pieces is fragmented.

One (1) "tack" with a nine (9) millimeter stem and a seven (7) millimeter top.

Four (4) closed staples what are one (1) mm wide and twelve (12) mm long.

One (1) slightly bent fine wire staple that is nine (9) long.

One (1) open fine wire staple that is eleven (11) mm across at the base.

One (1) very fine wire staple in the form of an "8" that is four (4) mm long

Two (2) fragments of curved metal that could be from the female portion of a gripper. Both of these are eight (8) millimeters long.

One (1) 3 x 5 millimeter piece of unidentifiable metal.

When a magnet is passed through the "ash" it collects a large number of metallic pieces too small to identify and the end of the magnet resembles a mop.

OTHER UNKNOWN MATERIAL—POSSIBALLY LEATHER ??

Two (2) items of dried material, that have not been burned, were recovered. One of these is 5 x 18 millimeters and the second is 3 x 10 millimeters. Under magnification they appear to be pieces of leather (?) bonded to a plastic screen type material. Since it was not burned these items must have been introduced into the cremated material after the cremation process.

When Hydrochloric Acid is dropped on the “ash” that passed through the 2 millimeter screen there is a positive reaction to silicon. Silicon is a common chemical element present in large amounts in sand, clay cement, concrete, etc, but in very small quantities in a typical human body.

To: Bobbie Cann

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-State crematory thought to be the cremated remains of GARY LEE CANN, a white, male, who was 51 years old at time of death. (DOB= 7-15-49 and DOD= 10-22-00)

Forensic Anthropology case number 02-19

Date: October 22, 2002

On October 10, 2002 I received one well wrapped package by UPS, Ground Tracking Number 1Z 002 A4R 03 2107 4237 from Bobbie Cann, 416 Tucker St. Chattanooga, Tennessee. Inside the shipping package was a clear plastic box measuring 13 x 7 ½ x 5 inches, with a white plastic top. When the white top is removed the cremated material is contained in two (2) clear plastic zip type closure bags measuring 10 ½ x 11 ½ inches with one bag inside of the other, ie. double bagged.

The cremated material is dry and is medium gray in color. Some fragments are black, some light gray, and some white. There are many bone fragments that fall into the 25 – 30 millimeter range that enable identification as to section of the skeleton from which they come, such as skull or long bones. In the pulverization scale that I have set up for the analysis of material from the Tri-State crematory this material falls in the Coarse range where Coarse is defined as “Sections of individual bones can be identified. Measurements of bone fragments are between 15 – 30 millimeters”.

This material is thought to be the cremated remains of GARY LEE CANN, a white, male, who was 51 years old at time of death on October 22, 2000. Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Total weight with plastic bag	3	12	1700
Will not pass thru a 4 mm screen	1	1	490
Will not pass thru a 2 mm screen	-	10	280
“Ash”	2	1	930

The analysis consist of screening the material through both a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and a 2 millimeter U.S.A. Standard Test Sieve (No. 10). The weight of each of these categories is given above.

BONE

There are at least thirty two (32) cranial bone fragments that range from 10 x 14 through 20 x 29 millimeters in size. One (1) of these is a 18 x 26 mm piece of the parietal bone with a section of the sagittal suture. There are three (3) fragments of the sphenoid bone measuring 12 x 17mm, 15 x 18 mm and 20 x 20mm. These do not appear to be human bone but as of this date we have not been able to determine a positive identification.

Long bone are represented by at least nineteen (19) fragments ranging in size from 6 x 25mm through 15 x 25mm. Six (6) of these are sections of a femur. There is a 14 x 15 millimeter fragment of an articular (or joint) surface but as in the three cranial fragments above, the bone does not appear to be of human origin. We will continue to search for a positive identification.

METAL

Eight (8) small closed staples measuring 3-4 millimeters in length and 2 millimeters in width were recovered. In addition, one (1) thin wire staple with the ends bent but not closed measuring 11 x 3 millimeters is present.

When a magnet is drawn through the "ash" it collects lots of fine metallic pieces such that the magnet resembles a "mop". The magnet was drawn through the "ash" at least twenty (20) times with the same results, a "mop" appearance with rust like particles and tiny metal pieces attached. At least twenty five (25) are larger pieces that look like rust. Nine (9) small round "balls" that are 2 to 3 millimeters in diameter are attracted to the magnet.

BRUSH

One (1) 16 millimeter long bristle from a coarse brush is present.

When Hydrochloric Acid was dropped on the "ash" that passed through the 2 millimeter screen there was an immediate and positive reaction to silicon. Silicon is a common chemical element present in large amounts in sand, clay, cement, concrete, etc., but in very minute quantities in a typical human body.

No evidence of teeth were found.

To: Murray

From: Bill

Subject: Follow up of my letter to you of 1-8-03

Date: 6-7-03

On January 8, 2003 I wrote you a note (copy attached) concerning your thin section analysis of at least three (3) bone fragments from my Forensic Case No. 02-19 (copy attached) and one (1) about an inch long mid shaft section of either a femur or tibia from my Forensic Case No. 02-20 (copy attached). My problem is that your report of 29 November 2002 states that the rib sections are from my 02-20.

The first of the court cases on the Tri-State Crematory law suits are scheduled for the middle of August. Already two (2) lawyers, Bill Brown of Cleveland and Alistar Newburn of Nashville have asked me for a summary of the material from the cremations that I have analyzed and especially on the three (3) that contain non-human bone. Please check either your records or with Mariateresa and see if you can figure out what the problem is. One of these days you will be called upon to testify and we want to be on the same page.

Hope that your summer is going well. The book by Jon Jefferson and me entitled "Death's Acre" is scheduled to be released on October 27. I (we) will have a signed copy for you.

The sooner I can get a correction would be helpful since the two (2) lawyers are waiting on my summary. Donna is typing on the summary now.

To: Murray

From: Bill

Subject: Problems with the case number 02-20

Date: January 8, 2003

Thanks for the thin section analysis reports. The report on 02-15 is great, however, we have a problem with 02-20. The story behind my 02-20 was that the man's wife was cremated at the Tri-States Crematory in Georgia and the cremated material was returned to him. Some time later he received a call from the Georgia Bureau of Investigation (GBI) saying that his wife had been positively identified thru DNA. When he picked up his wife's body he returned the cremated material to the GBI that he had originally been sent but he retained one piece of bone, about a one inch section of a femur shaft (could be Tibia). All I did on 02-20 was to weigh the second cremation, which was nothing but ash, and the lawyer asked me if I could determine if the Femur (or Tibia section?) was human or animal. There are no ribs from 02-20.

I think the ribs you analyzed are from 02-19. These are the ribs that you, Walter Klippel and I looked at in his lab and what he thought were pig ribs. Would you please look at the plastic bags and/or the glass or plastic vials to see what numbers are on those?

THE UNIVERSITY OF TENNESSEE



College of Arts and Sciences
Department of Anthropology
250 South Stadium Hall
Knoxville, Tennessee 37996-0720
(865) 974-4408
FAX (865) 974-2686

To: William M. Bass, PhD, State Forensic Anthropologist

From: Murray K. Marks, PhD, Associate Professor
Mariateresa A. Tersigni, MA, Graduate Student

Re: Thin section analysis of bone (02.20)

Date: 29 November 2002

Introduction and Methods

On 25 September 2002, Dr. William M. Bass requested microscopic assistance in his analysis of three burned bone fragments. At the thin section laboratory at the Department of Anthropology at The University of Tennessee sections of each bone were pressure embedded in Buehler Epoxide resin/hardner (plastic) following the modified petrographic procedures of Marks et. al. 1996. Two thin sections of each bone were made using a Buehler Isomet low-speed oil-cooled diamond saw. Histological analysis was performed at the Regional Forensic Center and in the Department of Pathology at The University of Tennessee Medical Center using an Olympus BX50 compound stereomicroscope at 10x and 40x power.

Results

All bone specimens are non-human. While they possess the contour of a human rib, the microstructure is incompatible with human bone. In a comparative analysis with a human rib at the same power, i.e., 10x and 40x, the osteons/Haversian canals of 02.20a, 02.20b and 02.20c are too small to be human (see Figure 1 - 4 on pages 2,3,4). Furthermore, the arrangement of osteons reveals very little remodeling characteristic of human bone.

Conclusion

Microscopic analysis of each rib fragment reveals they are not human. If we can provide any further information please feel free to contact the Forensic Anthropology Center at The University of Tennessee.

Sincerely,

A handwritten signature in black ink, appearing to read "Murray K. Marks".

Murray K. Marks, PhD,
Associate Professor

Mariateresa A. Tersigni, M.A.,
Graduate Assistant

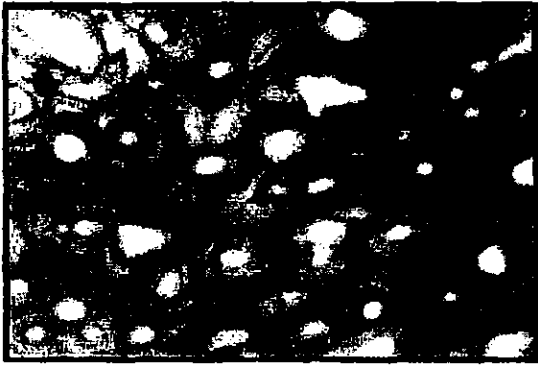


Figure 1. *02.20a* at 10x



Figure 2. Human rib at 10x



Figure 3. *02.20a* at 40x

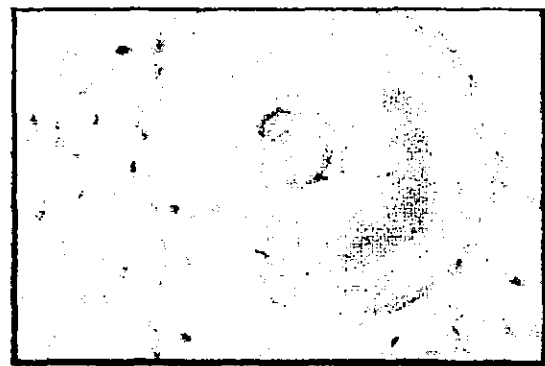


Figure 4. Human rib at 40x

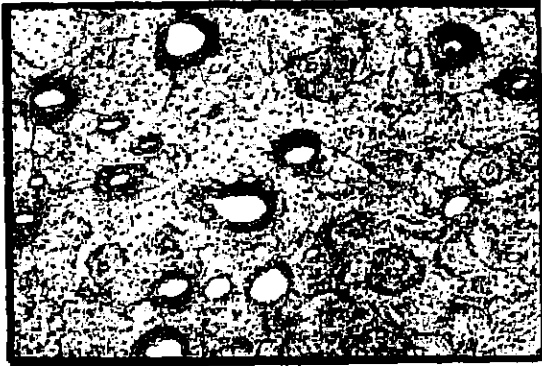


Figure 1. *02.20b* at 10x



Figure 2. Human rib at 10x



Figure 3. *02.20b* at 40x



Figure 4. Human rib at 40x

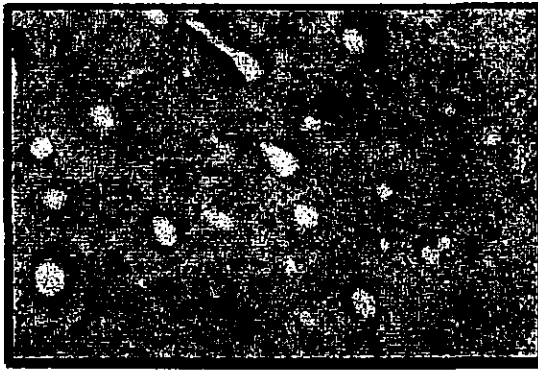


Figure 1. *02.20c* at 10x



Figure 2. Human rib at 10x



Figure 3. *02.20c* at 40x



Figure 4. Human rib at 40x

To: Attorney William J. Brown

From: Dr. William M. Bass, Forensic Anthropologist

Subject: The weight of the cremains from the positively identified body of MAMIE REBECCA WATTS, a 72 year old white female, (DOB 1-23-29 and DOD 12-20-01)
Forensic Anthropology Case Number 02-20

Date: November 7, 2002

On Thursday October 30, 2002 I met Attorney William J. Brown who gave me a black ceramic urn with a gray and gold flower motif that is 14 ½ inches tall containing the cremated remains of MAMIE REBECCA WATTS, a 72 year old white female whose body had been cremated at the Ralph Buckner Funeral Home in Cleveland, TN.

I was told by Attorney Brown that when MAMIE REBECCA WATTS died on December 20, 2001 that her body had been sent to the Tri-State Crematory in Noble, GA and that the family had received cremated remains said to be those of MAMIE REBECCA WATTS. Later the family was notified that the body of MAMIE REBECCA WATTS had not been cremated and her body had been positively identified by the Georgia Bureau of Investigation as one of the 339 bodies recovered. The family retained one bone fragment from the initial cremation by the Tri-State Crematory and Attorney William J. Brown turned that fragment over to me for analysis.

The positively identified body of MAMIE REBECCA WATTS was taken to Ralph Buckner Funeral Home for cremation and the weight of that cremation is as follows:

Material	Pounds	Ounces	Grams
Total weight with plastic bag	5	13	2625

A 50 gram sample was taken from the above for a chemical analysis.

THE UNIVERSITY OF TENNESSEE



College of Arts and Sciences
Department of Anthropology
250 South Stadium Hall
Knoxville, Tennessee 37996-0720
(865) 974-4408
FAX (865) 974-2686

To: William M. Bass, PhD, D-ABFA, State Forensic Anthropologist

From: Murray K. Marks, PhD, D-ABFA, Associate Professor

Re: Bone microstructure (02.20)

Date: 28 July 2003

Introduction and Methods

On 25 September 2002, Dr. William M. Bass requested microscopic assistance in his analysis of burned bone. At the thin section laboratory at the Department of Anthropology at The University of Tennessee a portion of bone was embedded in Buehler Epoxide resin/hardener (plastic) following the modified petrographic procedures of Marks and coworkers (1996). Three thin sections were made using a Buehler Isomet low-speed oil-cooled diamond saw. Histological analysis was performed at the Regional Forensic Center and in the Department of Pathology at the University of Tennessee Medical Center using an Olympus BX50 compound stereomicroscope at 10x and 40x power.

Results

The bone is not human. While the macroscopic structure is similar to a human long bone portion, the microstructure is incompatible with human bone. In a comparative analysis with cross sections of human long bones at the same power, i.e., 10x and 40x, the osteons/Haversian canals of 02.20 have an uncharacteristic (non-human) size and shape. Furthermore, the arrangement of osteons reveals very little remodeling characteristic of human bone. Finally, I sent the sections to Dr. Samuel D. Stout at The Ohio State University for a second opinion and his conclusions were identical.

Conclusion

Microscopic analysis reveals the bone is not human. If we can provide any further information regarding this analysis please feel free to contact me at the Forensic Anthropology Center at The University of Tennessee.

Sincerely,

A handwritten signature in black ink, appearing to read "Murray K. Marks", written in a cursive style.

Murray K. Marks, PhD, D-ABFA
Associate Professor

To: Attorney Bryan N. Cigelske
Susan Hodo, daughter of EDNA DORIS KOPP

From: Dr. William M. Bass, Forensic Anthropologist

Subject: Analysis of material from Tri-State Crematory thought to be the cremated remains of EDNA DORIS KOPP, white, female, age 68, who died on February 10, 1994
Forensic Anthropology case number: 02-22

Date: December 30, 2002

On December 13, 2002 one well wrapped package was received in my office at the University of Tennessee. I was out of town and did not pick this package up until Sunday December 22, 2002. The package was sent by UPS Next Day Air (Tracking number 1Z A2R 22201 3856 1784) and was mailed from "Mail Boxes Ect. #2401, (909)-781-9928, 6185 Magnolia Ave., Riverside, CA 92506". Inside of this package was a standard cardboard mailer that had been previously sent by Priority Mail (Return Receipt # N 014 553 664) to "Ms. Susan Hodo, 146 Monte Vista Dr., Scottsboro, Ala 35768", from Tri-State Crematory, P.O. Box # 58, Rockspring, Ga 30739. Inside of this mailer was a standard black plastic cremation box (6 1/2 x 4 1/4 x 8 1/4 inches). The cremated material was in a clear plastic bag tied with a red tie.

The material is light gray in color and is coarse ground (sections of individual bones can be identified. Measurements of bone fragments are between 15-30 millimeters). Weight of the dry material is as follows:

MATERIAL	Pounds	Ounces	Grams
Dry weight containing bag	4	13 1/2	2200
Will not pass thru a 4 mm screen	-	5 3/4	180
Will not pass thru a 2 mm screen	-	12	350
"Ash"	3	11	1670

The analysis consisted of screening the material through a 4 millimeter (mm) U.S.A. Standard Test Sieve (No. 5) and through a 2 mm U.S.A. Standard Test Sieve (No. 10). The analysis revealed the following

BONE

A 11 x 19 millimeter fragment of a parietal bone containing a section of the Sagittal suture and a 15 x 17 millimeter section of a cranial bone with a suture (probably Lambdoidal) are identified. There are a number of small cranial bone fragments that are too small for positive identification. A number of cranial bone fragments are light gray on the external and internal surfaces but the middle layer, or diploe, is black in color. This suggests that the crematory oven was not operating at a high enough temperature.

A number of fragments are from the long bones (arms and legs). One 11 x 16 millimeter fragment is from either the femur or tibia. There are three (3) pieces in the 14 to 18 millimeter long range from the bone shafts. One (1) 8 x 13 millimeter concaved articular surface is from probably a radius or ulna. A few of the long bone fragments have a bluish or greenish tint on the external surface of the bone.

TEETH

There is no indication of any teeth or dental appliances.

METAL

There are six (6) 4 x 8 millimeter closed or partly closed metal staples. There are two (2) open metal staples that are larger than the previous six. One is 10 millimeters and the other is 11 millimeters in width. These are probably from a cardboard coffin.

One (1) metal circular band with a hole in the middle is 3 1/2 millimeters wide and 4 1/2 millimeters long. This is made from a thin sheet of metal and rolled into a circular band

ROCK

Five (5) small pieces of what appear to be firebrick are present. A number of other cases from the Tri-State Crematory have contained pieces of firebrick. When I viewed the crematory in June of 2002 it was obvious that the bottom layer of firebrick was disintegrating.

Four (4) 2 to 4 millimeter pebbles of sand (?) with shiny surface particles that appear to be mica were recovered for the photograph.

When a magnet is passed through the "ash" it attracts a number of tiny metal fragments. The magnet looks like a "mop" after it has been passed through the bag containing the "ash". This is similar to other cases of cremated material I have tested that were returned from the Tri-State Crematory.

When Hydrochloric Acid is dropped on the "ash" that passes through the 2 millimeter screen there was a slight positive reaction to silicon. Silicon is a common chemical element present in large amounts in sand, clay, cement, concrete, etc. but in very small quantities in a typical human body.